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THE GARDEN CALENDAR

A radio discussion by W. R. Beattie, Bureau of Plant Industry, delivered during the Department period of the National Farm and Home Hour, Monday, April 26, 1937.

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Hello folks. Potato breeding work was actively undertaken by the workers in the U. S. Dept. of Agriculture in 1910 with a view to securing varieties resistant to the late-blight fungus. It was not until some years later that it became evident that the virus diseases were a greater menace to potato production than blight, because the virus diseases are transmitted by infection of the seed. In addition, the virus diseases cannot be controlled by the application of sprays to the foliage or even by seed treatment. Among the virus diseases that were giving the most trouble were, Mosaic, Leaf Roll, Spindle Tuber, Un-mottled Curly Dwarf, and a disease known as Streak. It was evident that varieties resistant to these diseases was the solution of the problem. The disease known as Mild Mosaic was giving the most trouble in the potato fields of Maine and so breeding work was started with the objective of securing varieties resistant to this disease.

The first problem was to find seedlings that were not only apparently resistant to virus infection, but those that would produce blossoms and seed. When you consider that comparatively few of our regular varieties of potatoes produce blossoms and the seed balls, you will readily understand that it is quite a problem to select parents for the crosses through which to produce the new varieties. Not only was it necessary to use parents that were resistant but also those having the right shape and size of tuber required on the market. To make a long story short a large number of crosses and double crosses were made, using Rural New Yorker No. 2 as one of the parents. The Katahdin and the Chippewa are two of the varieties that have resulted from these crosses. Although both of the parents were comparatively low in yield, the combination as is usually the case resulted in increased vigor and high-yielding qualities in the resultant offspring.

The Katahdin and Chippewa are now being quite extensively planted throughout the northern potato-growing regions where the Rural New Yorker and similar varieties have ordinarily been grown. In some cases they have out-yielded the Rurals and in other cases the Rurals and Green Mountains have out-yielded them. These varieties have, however, shown a consistent resistance to the Mild Mosaic disease and therefore have proved a boon to growers in sections where this disease has been causing heavy losses.

Another variety produced along about the same time is known as the Golden which is the result of an objective to produce a yellow-fleshed variety adapted to North American conditions. As you probably know the yellow-fleshed potatoes are highly prized in what is believed to be its ancestral region of the Peruvian Andes. In Europe yellow-fleshed potatoes are often preferred, but in this country we seem to prefer the white-fleshed varieties.

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Still another new variety is known as the Houma. The Houma was produced for the purpose of securing a new commercial variety combining resistance to Mild Mosaic with the ability to produce a large yield of smooth tubers possessing high cooking quality. This variety was first grown in 1929 at Aroostook Farm, Presque Isle, Maine. The Houma is from a cross between Katahdin and the variety known as Charles Downing. Tests covering a period of several years have shown that it is highly resistant to Mild Mosaic, also that it produces tubers of desirable shape with shallow eyes. It has been tested in several states and at Presque Isle, Maine. The average yield of primes for the 4-year period, 1932 to 1936, was 350 bushels to the acre or a total of primes and culls of 414 bushels. As compared with other varieties it has yielded a trifle better than Green Mountain, Irish Cobbler, Katahdin, and Chippewa. For five years the Houma has been tried in Louisiana, and it is considered an outstanding variety for that State, outyielding Chippewa, Katahdin, and Triumph. Small quantities of seed-stock were sent to 20 cooperating State experiment stations for tests in 1936. In this way seed stock is being provided for more extensive experiments to test its adaptability to the different potato sections.

These four new varieties are not the sum total accomplished by the workers in the Department in the production of disease-resistant varieties of potatoes, for a large number of un-named seedlings are still under test and from them may come several new and improved varieties. This work is done in close cooperation with the State workers and the results are used by the State workers in formulating recommendations for the growers.

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